CLAIMS

1. A synergistic composition comprising:

(i) a THP salt (as hereinbefore defined) and

(ii) a biopenetrant, in which the biopenetrant comprises a polymer of an unsaturated carboxylic acid or a copolymer of an unsaturated carboxylic acid with a sulphonic acid, said polymer or copolymer being terminated by a mono- or di-phosphonated unsaturated carboxylic acid group or having such monomers incorporated into the polymer backbone.

2. A composition according to Claim 1, in which the THP salt is tetrakis(hydroxymethyl) phosphonium sulphate.

3. A composition according to Claim 1, in which the THP salt is tetrakis(hydroxymethyl) phosphonium phosphite, bromide, fluoride, chloride, phosphate, carbonate, acetate, formate, citrate, borate or silicate.

4. A composition according to any one of Claims 1 to 3 wherein the biopenetrant comprises a polymer of an unsaturated carboxylic acid or a copolymer of an unsaturated carboxylic acid with a sulphonic acid, said polymer or copolymer being either terminated by vinylphosphonic acid (VPA) or vinylidene-1, 1-diphosphonic acid (VDPA) or having such monomers incorporated into the polymer backbone.

5. A composition according to any one of Claims 1 to 4 wherein the polymer or copolymer of the biopenetrant is a polyacrylate or an acrylate/sulphonate copolymer.

6. A composition according to Claim 5, in which the biopenetrant is a VPA end-capped polymer or a VDPA end-capped polymer (both as hereinbefore defined) or a polyacrylate incorporating VPA and/or VDPA monomers.

7. A composition according to Claim 5, in which the biopenetrant is a VDPA end-capped copolymer or a VPA end-capped copolymer (both as hereinbefore defined) or an acrylate/sulphonate copolymer incorporating VPA and/or VDPA monomers.

8. A composition according to Claim 6 or 7, in which the proportion of VPA or VDPA polymer or copolymer is in the range of from 1 to 50% by weight, (based upon active solids and a 1 to 74% THP salt formulation).

9. A composition according to Claim 8, in which the proportion is in the range of from 1 to 25% by weight.

10. A composition according to Claim 9, in which the proportion is in the range of from 1 to 5% by weight.

11. A synergistic biocidal composition, substantially as described herein with reference to the Examples.

12. A synergistic iron sulphide dissolving composition, substantially as described herein with reference to the Examples.

13. The use of a composition according to any one of Claims 1 to 11 as a biocide.

14. The use of Claim 13 wherein the use is against planktonic (free-swimming) and/or sessile (attached) bacteria.

15. The use of Claim 13 or Claim 14 wherein the use is in reducing the level of general heterotrophic bacteria and/or of sulphate reducing bacteria in water.

16. A method of treating a water system contaminated, or liable to contamination, with microbes such as bacteria, fungi or algae, which method comprises adding to said system separately or together, a biocidally active amount of a THP salt and a biopenetrant, in which the biopenetrant comprises a polymer of an unsaturated carboxylic acid or a copolymer of an unsaturated carboxylic acid with a sulphonic acid, said polymer or copolymer being terminated by a mono- or di-phosphonated unsaturated carboxylic acid group or being a random copolymer containing a mono or di-phosphonated unsaturated carboxylic acid, thereby killing at least some of said microbes.

17. The use of a composition according to any one of Claims 1 to 10 and 12 to dissolve metal sulphide.

18. The use of Claim 17 wherein the metal sulphide is iron sulphide scale.

19. A method of treating a water system containing or in contact with an metal sulphide scale, which method comprises adding to said system separately or together, a THP salt and a biopenetrant, in which the biopenetrant comprises a polymer of an unsaturated carboxylic acid or a copolymer of an unsaturated carboxylic acid with a sulphonic acid, said polymer or copolymer being terminated by a mono- or di-phosphonated unsaturated carboxylic acid group or being a random copolymer

containing a mono or di-phosphonated unsaturated carboxylic acid, thereby dissolving at least part of said scale.

20. The method of Claim 19 wherein the scale is iron sulphide scale.